

ALASKA FIRE REPORT 1970

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1970

U.S. Department of the Interior - Bureau of Land Management

FACTS AT A GLANCE

<u>Fire Data</u>	<u>1970*</u>	<u>1969</u>	<u>14-Year Average</u>
No. Fires	504	511	290
No. Acres Burned	118, 137	4, 231, 830	923, 078

* January 1 to September 20

Crew Data

36 trained 25-man crews from 25 villages.

200 on standby during peak of season.

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	No. <u>Individual Hires</u>	<u>Wages</u>
Total Emergency Fire Fighter Employment	2, 948	\$3, 657, 698
Plus 800 crew members sent to Wenatchee, Washington, complex to assist USFS.		

Aircraft

Type	No.
Detection	8
Retardant	9
Initial Attack Helicopter	17

Created in 1849, the Department of the Interior - a Department of Conservation - is concerned with the management, conservation, and development of the Nation's water, wildlife, mineral, forest, and park and recreational resources. It also has major responsibilities for Indian and Territorial affairs.

An agency of the Department of the Interior, the Bureau of Land Management is charged with the administration of the 283 million acres of Public Land in Alaska. These Public Lands are your heritage to enjoy. Good manners and good camping practices are as necessary to the Lands' well being as good multiple use management by BLM, ranchers, miners and other users. Respect the rights of others and you will always be welcome.

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ALASKA FIRE REPORT — 1970

BUREAU OF LAND MANAGEMENT

Alaska State Office

Anchorage

October 1, 1970

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1970 ... A PROMISE TO ALASKA

It may be possible at last to make a permanent reduction in Alaska's annual million-acre wildfire loss.

That seemed to be the promise 1970 made to the largest state.

The promise came in a system of readiness for instant fire attack hitherto unknown to Alaska.

It raised hopes that such capability could become permanent, and that the excessive wildfire drains of the past upon state and federal forest, tundra, and finances could cease.

The Bureau of Land Management, applying the new capability, cut the 1970 burn area to 118,101 acres through August 30, compared with a 14-year annual average of 923,078 and a 1969 total of 4,231,820.

This was achieved despite explosive early season burning conditions believed to have been unequalled by any previous similar period in Alaska.

The Bureau responded to and controlled 301 fires in Alaska during the first 75 days of the 1970 fire season. That was a record for any similar period, and 12 more than for the same period in 1969.

The Bureau held the burned area through June 22, during the high-incidence period, to 9,700 acres compared with 524,600 acres during a similar 1969 period. (See statistical section of this report.)

Fire control expenditures also were cut. The 1970 cost, as of August 31, was estimated at \$5 million. The 1969 total exceeded \$22 million. The 14-year average through 1969 was \$4,850,181.

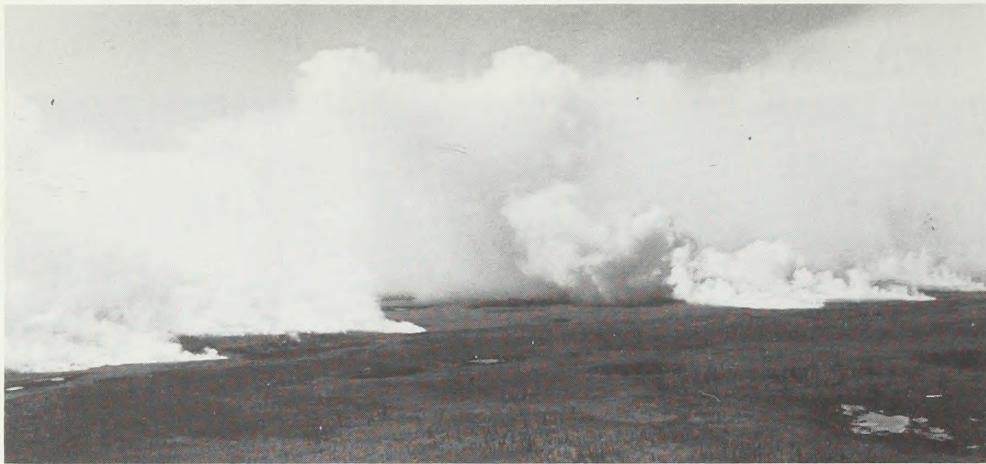
The 1970 cost included \$500,000 in special spending authority for a new initial attack force. This authority, as was intended, was fully committed by April for standby helicopter hire, retardant aircraft, crew hire, and training. The new force was patterned after the model outlined previously in the Bureau Normal Year Fire Plan.

A factor in 1970's overall small fire loss was favorable weather after July 10, which cut the fire season in half.

The effectiveness of the instant-attack effort was evaluated on the basis of its performance during the first 75 days of the burning season, before weather became a factor.

Thus the way appeared open for Alaska to enter a new period of relatively small annual loss through wildfire, and a period of immediate and long-term savings for the taxpayer.

The report which follows is divided into two parts. First comes a general discussion of the main elements of the 1970 initial-attack force, its preparation, and its methods of operation. That is followed by the technical information upon which the general report was based.



SPECIAL NEEDS SPECIAL AUTHORITY



The Bureau's new initial-attack force was created in Alaska with special authority and funds provided by the Secretary of the Interior specifically for the 1970 fire season.

The authority was used to contract ahead of time for seven standby helicopters with pilots; to train nearly 1,000 men as special crews; to convert existing or acquire necessary new equipment; to deploy the force at 12 bases for greatest prospective effectiveness, and to integrate the new force with the conventional fire fighting organization. The new instant-attack group, which was nicknamed the "helitack" force, was not intended to replace smoke-jumpers or other conventional fire fighting forces or methods.

Helitack was intended to get on a fire quickly while it was small and thus easiest to control. That helitack sometimes constituted the entire attack on numerous small fires merely testified to the effectiveness of the technique.

Past limitations on Bureau authority prevented advance preparation of this kind. For all practical purposes in the past, except on a very small scale, the Bureau was required by restrictions in law and policy to wait until a fire was burning out of control before it could mobilize, equip, and sustain a suppression force.

The result often was loss of valuable resources, inefficiency, environmental damage, and astronomical expense. Traditional fire suppression methods frequently sacrificed acreage to buy time to organize a suppression effort.

It was not uncommon, therefore, to find that fires grew rapidly beyond control by any reasonable force, and beyond financially bearable cost.

Alaska's wildfire history shows many ups and downs. Severe burning years have been followed by years of little activity. Thus preparation for the "average" year under traditional policies often proved at the end of a given year to have been either too much or too little.

Beginning in 1965, the burning trend climbed steeply upward. By 1968 and 1969 millions of acres were burning each year. There seemed no way to reverse the trend using past methods.

In 1969 almost four and a half million acres burned much of it within sight of populated areas. Smoke covered much of sparsely-populated interior Alaska, preventing detection of several large fires, reducing air defense efficiency, closing airports, and focusing public attention on the fire problem to a degree previously unknown. Environmental consciousness played a part in this public awareness.

Toward the end of the 1969 season, the disastrous Swanson River fire raged out of control for 3 weeks, blackening 80,000 acres of the populous and valuable Kenai peninsula, 30 minutes by air from Anchorage. This burning took place mostly within the Kenai National Moose Range but threatened intermingled oil field installations and nearby villages and towns.

The Bureau and several cooperating federal, state, and local agencies made the greatest effort in Alaska's history to control the Swanson River fire, amassing more men and material than ever before committed to a single fire. Public praise for this effort was moderate, but criticism was great--chiefly of delays associated with classic fire-fighting methods.

When homes were threatened, as many were on this fire, public interest in fire fighting became intense.

By 1970, it was obvious in Alaska that no longer was it feasible in populated, high-value areas to gain mobilizing time by sacrificing acreage. Even in isolated areas such sacrifices are attracting increasingly critical appraisal because of their possible long-range environmental impacts.

In view of these developments, the Bureau concluded that an effort should be made for ensuing years to create a trained and standing instant-attack force which could control wildfires while they were small and thus manageable, and while such control would cause least environmental damage. Rehabilitation expense also would be lessened.

To create such a standing force would require funds and authority never before available through normal budget and appropriation processes. This problem, and the Bureau's suggested remedy, were discussed with the Department.

The director of the Bureau, in presenting the problem to the Department, offered a remedy based upon several "normal year" fire plans of the past, and upon his long experience with wildfire suppression. The remedy proposed was that advance contracting and spending

authority be requested and that it be used to create a new initial-attack force.

The Department, after consulting appropriate Congressional committees, decided to make advance spending authority available from Department sources, and to test the new concept before asking for year-to-year statutory authority and funds.

Accordingly, the Secretary set aside \$500,000 for Bureau use in Alaska during 1970 to provide the new capability.





INSTANT WILDFIRE ATTACK COMES TO ALASKA: A REPORT

Several factors contribute to the effectiveness of any wildfire fighting organization. They have been described at length in the past by the Bureau and by other agencies with fire protection responsibility.

However, certain aspects unique to Alaska have a bearing upon fire fighting in this state, and upon the tactics and forces employed.

The most important of these will be discussed here with the hope that the discussion will contribute to understanding of the Bureau's problems in Alaska, as well as its proposals for meeting them.

Of the major elements upon which fire fighting organizations are built in Alaska, those dealing with initial attack will be emphasized, since it is the essence of this report.

These elements are fire detection; rapid and aggressive initial attack; organizing, equipping and deploying standby instant-attack crews; and effectiveness of native Alaskans as fire fighters.

Detection

The sooner attack begins on a fire, the smaller it may remain. Also better are the odds for controlling it, and thus for saving money, manpower and natural resources.

Obviously, early discovery of a fire is of paramount value to effective initial attack.

The Bureau therefore continued in Alaska during 1970 high altitude jet aircraft surveillance; low level piston aircraft patrol; fixed observation towers; and reliance upon broad public contact.

Detection based upon visual observation cannot function effectively without good visibility. When visibility is low, due to damp, cool weather, likelihood of new fires is reduced. If they do occur, control is aided by the cool conditions.

However, if a number of fires already are burning, and smoke haze fills an otherwise clear sky, visual detection of small new fires becomes difficult, if not possible. Under such conditions, it is not uncommon for large fires to burn undetected, and for new fires to be mistaken for fires previously reported.

Since the fires that grow to the largest size generally are those started by lightning in remote areas, and since large fires produce the most smoke, the Bureau began a "preventive medicine" campaign to aid detection. If the likelihood of lightning could be detected ahead of time, measures could be taken to place initial attack crews immediately on ensuing fires.



An overall gain in atmospheric clarity, visual observation, and firefighting efficiency would result.

Therefore, high altitude reconnaissance was conducted daily by jet aircraft on a fixed but generalized route through interior Alaska where lightning fires are most numerous and population sparsest.

Flights left Anchorage about 11:00 a.m. and spent the afternoon observing thundershower buildups. The flights were scheduled and flown only on days when there were forecasts of appreciable thunderstorm activity.

By observing and measuring the cumulus cloud buildups, the high-altitude observer could alert low-level aircraft patrols in threatened areas.

On occasion, and on the basis of this surveillance, smokejumpers were dispatched to follow threatening thunderstorms. If fires were observed in the path of the storm, smokejumper attack was immediate.

Low level patrol planes also performed another function. By sweeping broad areas on a daily basis, regardless of storm activity, they spotted and reported man-caused fires. These fires have been on the increase in Alaska. In such cases, initial attack took four forms—helitack, retardant aircraft, smokejumpers, or roadside tankers—or all four, or any feasible combination.

Fixed observation towers are a special problem in Alaska. Suitable sites are scarce near populated areas where they are most needed. The terrain often does not provide lookouts with broad views. Thus an unreasonable and unbearably expensive number of fixed lookouts would

be necessary for complete coverage of the 225 million acres requiring surveillance. Lack of roads, housing, labor force, and availability of other "support" in outlying areas makes erection and manning of towers almost insurmountably difficult. Usefulness of the fixed towers drops virtually to zero under severe smoke conditions.

Nevertheless, the Bureau used lookout towers as available during 1970. Two were in use near Fairbanks in 1970, one at Murphy Dome and another at Birch Hill. Two others were used in outlying areas on the east, near the U. S.-Canadian border. Still others were manned at Bald Mountain, Lazy Mountain, Gordon Lyon Peak, and Jean Lake in the Anchorage-Palmer Area.

Numerous fires were reported by the public at large. Airline pilots, bush pilots, private pilots and citizens travelling by car frequently reported fires. Many turned out to be reports of the same fire. But the Bureau checked out each report. Through its public information program the Bureau made a continuing effort to increase public awareness of fire, and to enhance the public's sense of duty to prevent and report fires.

Reports of fires reached Bureau fire control centers by a variety of means, usually by radio or telephone. Responses to such reports are described under "Initial Attack".

Initial Attack

A fire needs time to grow big. When first reported, most fires are less than 5 acres in size. A small crew of trained men, arriving on the fire promptly with effective equipment and tactics, usually can subdue such a fire





quickly. The larger the crew, and the better it is equipped, the more certain its control. Getting to the scene in time with sufficient force is the key to controlling any fire.

For a long time in the past, men could get to fires in remote areas in Alaska only on foot or by amphibious aircraft. They could not carry much equipment. Long delays in reaching the fires were unavoidable. So many fires soon overmatched the fire fighters.

As a result, no attempt was made to combat some fires. Much acreage was sacrificed because no reasonable means existed to stop them. The losses in natural resources that followed were accepted so long as there were no practical alternatives.

When parachute drops became practical, trained parachute jumpers were dropped on fires, along with light equipment. This initial-attack technique was a breakthrough in its day. Many fires were caught while small and controlled before they could do extensive damage.

Still a number of fires continued to get away because of unavoidable delays--time lost in detection; time lost getting jumpers into the air and over the fire; time lost gathering up parachuted equipment; and time lost analyzing the fire and organizing an attack. An inadequate communications system sometimes made effective coordination all but impossible between elements of the initial attack organization, particularly on retardant drops.

With development of the jet powered helicopter, and an improved communications network, an improved response became possible--within certain operating limits. Helicopters are almost instantly ready to fly when matched against conventional aircraft. Helicopter borne initial attack crews can live beside their transport and thus get away faster. They can arrive on the fire in a group, reconnoiter while hovering at their destination, and land near the fire, almost at any point they desire.

The use of chemical retardant, dropped as a slurry from tanker planes to "cool" fires, long has been an important part of initial fire attack and subsequent ground attack. Helicopter crews enjoy an advantage here also.

They can carry water buckets, some of which are collapsible. After arriving on the scene, the hovering helicopter can dip a bucket into almost any nearby lake or river--they bound in Alaska--fill it within seconds with 140 to 450 gallons of water return to the fire and dump it with precision. Mobile radios coordinate such work with crews on the ground. Thus an important increase in attack effectiveness is possible.

Regular retardant drops by fixed-wing planes can be ordered also, as needed, to supplement or replace water drops. In some situations, retardant aircraft are dispatched to the fire simultaneously with helicopters, and both water and slurry are used.

Current size of the typical helitack crew was determined by the capacity of the Bell 205 A-1 helicopter. This aircraft can transport, in addition to the pilot, 14 men, selected minimum equipment, and a water bucket. Smaller helicopters carrying a pilot and eight men also were in use in certain areas.

The effective range of such helicopters is 100 miles. By refueling at the fire scene, using cached fuel or air drops, helicopter range could be extended, or operating time within the area increased.

As the distance from the helitack base extended beyond 100 miles, smokejumpers became increasingly competitive with helitack as to overall speed of response. At distances beyond 200 miles, fixed-wing aircraft overcame their relative getaway slowness and asserted their superior cruising speed. Thus smokejumpers often became the first choice for initial attack.



Strategic deployment of additional helitack crews could compensate for this long-range smokejumper advantage throughout most of Alaska if it should become advantageous. But experienced fire administrators as yet favor combined or coordinated use of helitack and smokejumpers on the basis of fire conditions, rather than as determined by aircraft ranges. Thus they are free to call for smokejumpers within helitack range, as well as to send helitack into heretofore exclusively smokejumper range. Cargo-carrying ability of smokejumper aircraft also can be used to support helitack crews, especially with fuel drops.

It is obvious that there must be variation in initial-attack responses, determined usually by the problem posed by any given fire.

A fire generally falls into one of two broad types--a problem fire difficult to control and with potential for a long and troublesome life, or a dangerous spread into surrounding high value areas; or a no-problem fire with little threat if properly controlled.

A problem fire would be a blaze in a high-value area in heavy and unbroken fuel, aided by high winds and low humidity.

A no-problem fire might be a homesteader's windrow of cleared timber and debris burning in an open field, relatively easy to extinguish, with little chance of spread to surrounding forest--but which, if uncontrolled, might start a problem fire, and contribute to smoke haze and lowered visibility.

A fire's potential for destruction, either immediate or prospective, is the key to deciding whether or not it is a problem.

Within reason, dispatchers and fire bosses elected to "overkill" a no-problem fire on grounds that a dead fire always is less costly than a living fire. They knew that too

little effort was wasted effort if the fire got away. Wasted effort therefore was the most expensive effort. Response to any fire was the maximum that could be exerted reasonably under the circumstances.

The following, excerpted from a Fairbanks report, illustrates the typical initial-attack response during 1970:

"When a fire was reported the dispatcher sounded the fire siren alerting initial attack crews. Using information obtained from the source of the fire report, and his general knowledge, the dispatcher then classified the fire as:

1. A no problem fire on the road.
2. A no problem fire off the road.
3. A problem fire on the road.
4. A problem fire off the road.

There were pre-determined attack plans for each kind of fire:

"No problem fire on the road: A 205 A-1 Bell helicopter with fire boss and 13 helitack crewmen were airborne within 3 minutes from sounding of the siren. Final directions and location of the fire were radioed to the crews en route. A fire truck with water tank and pumper was sent to the fire by road.

"Problem fire on the road: Immediately sent out a 205 A-1 Bell helicopter with 14 firefighters, a 206 A-1 Bell helicopter with a fire boss, and 140- and 450-gallon collapsible buckets; one fire truck by road, one 4,000-gallon tanker as well as one tracked vehicle or skidder with 450-gallon tank pump and high pressure nozzle, plus a 450-gallon reserve trailer unit.

"No problem fire off the road: A 205 A-1 Bell helicopter was dispatched with fire boss and 13

helitack crewmen. Fourteen smokejumpers were also dispatched in a DC-3, and two retardant planes were ordered immediately into the air for fire within 30 miles of the base. Six retardant planes were dispatched if the distance was over 30 miles.

"Problem fire off the road: A 206 A-1 Bell helicopter was dispatched with a fire boss and 140- and 450-gallon collapsible buckets; also a 205 A-1 Bell helicopter with 14 helitack firefighters and a DC-3 with 14 jumpers. Six retardant planes were sent to fires within 30 miles of the base, and nine retardant planes to fires outside a 30 miles radius. If conditions warranted, manning was increased twice, three, or four times, depending upon the seriousness of the situation and available supplies.

"Once the response to a fire began, full



support efforts were continued until it was controlled, extinguished, or equipment and supplies exhausted.

"Economy lies in getting a large number of men and effective equipment onto the fire immediately. To do this crews were on alert each day during the fire season when there was danger of wildfire. In addition to the Fairbanks area crew, there was an eight-man helitack crew at Bettles, and 25-man helitack crews at: Minchumina, Fort Yukon, Delta, Tanacross, Galena, McGrath, Skilak Lake, Anchorage, Glennallen, and Aniak.

"These centers were so arranged that operations with a 100 miles radius could just about cover the area needing protection. Retardant drop planes were stationed at Galena and Fairbanks, complete with retardant mixing facilities. Retardant mixing plants also were located at Bettles and Tanacross to be used by planes using other bases to shorten turn-

around time.

"The critical parts of the chain tested during 1970 were dispatch, initial attack, and standby procedures. Costs were high. Contracted 205 A-1 Bell helicopters were assured a \$1,500 a day standby fee. Actual use was charged at \$550 per hour per helicopter at each of the operating areas in the Fairbanks district. (The same rates applied to Anchorage.) The helitack crews were on standby at full strength during the day and early evening. A smaller standby crew was maintained at night. The continuous daylight of summer in Alaska required that someone be on duty at all times, even though fire outbreaks diminish markedly between 9 p.m. and 5 a.m.

"Standby helicopters waited on helipads fully



loaded with hand tools for initial attack, and the helitack crew and pilots always were in readiness. A 3-minute takeoff time was established and enforced.

"Conventional, organized crews were trained in 25-man native village units which are rotated into the major fire centers at Fairbanks, Anchorage, and Skilak Lake. These crews are available as backup and as replacements for helitack and smokejumpers, so that these initial attack crews could be deployed elsewhere.

"Each fire was fully contained as rapidly as possible. Mobile helitack and smokejumper personnel were replaced on going fires as quickly as practicable so they could be returned to initial attack standby, and the integrity of their capability protected."

The Anchorage district also implemented a similar

system and it functioned in an equally effective manner.

Organization of Helitack Crews

Fire fighting organizations and methods reflect orthodox concepts which have evolved through long experience by the Bureau and other agencies with fire protection responsibility.

Basically, a field fire fighting organization is headed by a "fire boss" who is in charge of the field force and its operations. He is aided by several assistants who supervise such things as planning, coordination, supply, service, logistics, equipment, safety, transportation, payrolls, aircraft, and numerous pressing details, including the release of information to the public.

The basic unit of a conventional ground force is an



organized crew of 25 men. Such a crew consists of four squads of six men each, and one other man, who serves as crew boss. One man in each squad serves as squad boss (If only one squad is on a fire, the squad boss is "fire boss").

The 25th man, or crew boss, conveys orders from fire management to the squad leaders, who then direct the work of the men on the line.

As the complexity of fire organization grows, the numbers and kinds and duties of bosses proliferates. (Examples: Sector Boss, Division Boss, Line Boss, Cat Boss, etc.)

With formation of 14-man and 8-man helitack crews, two new organization units took shape. They were modifications of the standard 25-man crew.

The helitack crew functions in the same way as a 6-man squad within the conventional 25-man crew.

Thus a 14-man helitack crew was composed of a squad leader and 13 men. An 8-man helitack crew consisted of a squad leader and 7 men.

There was need to coordinate the movements and actions of crews on the ground, especially when several fires were burning at the same time.

There was need also to evaluate the effectiveness of the ground attack in its earliest stages, and to call for more help if needed, for retardant drops, or a revision of attack plans. Thus observation from the air became essential.

This function of observation and coordination was performed by a regular Bureau employee experienced in initial attack. Usually he was an experienced smokejumper or former jumper and usually held supervisory rank.



In the Fairbanks District, this experienced person was nicknamed "super fire boss." (Anchorage used no similar nickname although it used key supervisors in a similar capacity.) When travelling separately, the helitack fire boss carried water buckets for both helicopters.

Fairbanks formed its 1970 helitack crews from organized crews. In this sense, its selection method was more passive than observed by the Anchorage district.

Organized crews usually were recruited by a member of a local community. The recruiter often became the crew boss. He rounded up 25 men, including himself and all reported as crew.

Village selections did not always produce the best men. The selections sometimes proved to have been determined not by aptitude but by a combination of village politics and nepotism. As a result the original selections were subject to change. Some men had no stomach for the work, others were called home by

emergencies, or religious obligations, and others were found unsuitable and were sent home by the Bureau.

The Anchorage district, particularly at its McGrath helitack base, tried to hand pick its helitack crew members. To do this, Bureau fire personnel visited native communities before the fire season. They interviewed men who had fought fire previously, and many who had little or no previous fire fighting experience.

Men were chosen for their leadership qualities, aptitude, and desire. No conscious attempt was made to fill the roster of any given crew with experienced men from a single village. The result was a pool of hand-picked men from divergent areas. These differing crew-selection methods produced differing training requirements for each district.



Intensive helitack training was given to each crew as soon as it reported. This covered a 2-week period, as a rule. Training for men previously trained and experienced in fire fighting as members of organized 25-man crews or as smokejumpers was limited as far as practicable to their new speciality--operating with helicopters.

For men who had no previous fire-fighting experience or training, basic instruction had to be provided in fire behavior, fire fighting technique, safety, fire fighting organization and other subjects. This basic training required another week or 2 weeks.

Training of initial attack crews was continuous, however. There were new techniques, new equipment, and new knowledge to be shared and tested. In all, training was provided for 1,200 men. Of these 238 were assigned to helitack crews.

The Alaskan Native as a Fire Fighter

Good fire fighters, as workers in almost any en-

deavor, must have certain qualities to be effective.

First, they must be in sound physical condition, with stamina and capacity for prolonged, arduous and frequently dangerous physical work.

They must be conditioned to live outdoors and work safely in bad weather and perform as members of a complex team--or alone if necessary.

They also must be free to travel far from home, perhaps for weeks at a time. Thus they cannot--unless they are regularly employed by a Federal reserve agency--hold other regular employment while they fight fires.

Experience has shown that the normal pool of unemployed men in a city is a poor place to recruit fire



fighters. Employment agencies easily supply such men and most of them, once on a fire, quickly ask to be relieved--or simply go over the hill. They have little liking, or physical endurance, for the difficult, dangerous, and dirty business of fighting fire once they arrive on the scene. The expense of transporting, feeding and training such men is great. It becomes exorbitant when it is wasted, as it is when the men walk off the job or are fired because of poor performance or refusal to work.

Hiring fire fighters "off the street" thus often lost, on the fire line, any gains which might have been made toward alleviating unemployment.

The Bureau has sought to protect natural resources as well as to assist in broad social aims.

Fortunately in Alaska it is possible to achieve these two aims without lessening performance in either. The method is not new.

It began about 20 years ago with organization by the

Forest Service of its now-legendary Southwest Emergency Forest Fire Fighters. New Mexico's famed Mescalero-Apache "Red Hats" are an example.

This method of organizing fire crews since has been adopted by the Forest Service generally throughout the West. Numerous Bureau employees have had training and experience while serving with or as members of these crews and fire organizations.

For several years, "trained crews" were used in Alaska. At first they were 18-man crews recruited for the most part from the native villages. Some 25-man crews also were organized and trained.

With the Glacier Wall Fire in Montana in 1967, and the use thereon of Eskimo and Athabascan Indian crews from Alaska, a shift was begun by the Bureau toward formal adoption in Alaska of the standard 25-man crew. The change was desirable as an aid to integration of Alaskan crews with those of other states when crews from several states and agencies were battling fire within the same fire organization.



The Alaska changeover was not completed until 1970. There were a number of "reasons."

Among them was the former belief that training such crews and rounding them up for fire duty was prohibitively expensive. Nonetheless, some training was conducted in native villages and an attempt was made to form village crews along the SWFF pattern. The villages were to be the main source of fire fighters, regardless.

Another concern, stemming from experience with "pick up crews" and unemployment agency referrals, was that such crews were poor performers on the fire line.

Then in 1967 a series of fires in Montana, Idaho and Oregon so drained the fire-fighting manpower of the "Lower 48" that a call was sent to Alaska for men with

any kind of fire fighting experience. (The call was repeated in 1970 for fires in Washington and 800 Alaskans were sent.)

The Eskimos and Athabascan Indians of Alaska responded. Mingled with organized crews from the Lower 48, they proved themselves tenacious and skillful fighters under foreign conditions of heat and terrain.

This experience "outside" showed the Alaskan native he could compete in any fire fighting league. The effect upon some of the Alaskan villages was profound. Having seen a bit of the world, having proved themselves, and having come home with a bundle of cash, these men no longer were willing to settle back into their old patterns. They actively sought duty as fire fighters--and in Alaska.

The Bureau also was taking a second look. Fire incidence was rising, especially the man-caused variety. When large fires proliferated and covered hundreds of thousands of acres at a time, as they did in 1968 and 1969, experienced fire personnel from BLM areas in the Lower 48 were brought into Alaska to help supervise the Alaskan



fire effort. This drew men from responsible jobs to which their home organizations were committed, and thus caused internal protests. The costs of this system were high.

It was obvious that better remedies had to be found in Alaska for Alaskan fire problems. One such remedy seemed to be a formal and permanent program of organizing and training native Alaskan crews on the SWFF pattern, provided funds and administrative approval could be forthcoming. Benefit to the native economy could be substantial.

So, during 1970, the Bureau began a program of formal organized crew organization and training in Alaska. Funds for this program came both from the special authority and from regular funds.

Partly as a result of this work, and partly as a result of the success of its helitack program, the Bureau called only upon a minimum amount of outside help this year to control its fires in Alaska. That was the first time in the history of the Bureau in Alaska that this was possible during an active fire year.

As the Forest Service experience with its SWFF crews has demonstrated, there are long-term gains in organizing native crews. Once trained and certified, native crews become a manpower resource upon which the Bureau can depend and plan. Likewise, trained crewmen can depend and plan upon seasonal income from the Bureau. (In years of few fires such income might be small.)

Also, through this process, the Bureau no longer need be victimized by the unemployed person who signs up to fight fire--and walks off the job with his first paycheck, or after his first hour of grueling work.

Such training did not cost the Bureau many dollars, nor did it produce many lasting results.

With 1970 and its authority for advance preparation, a change in training methods became possible. The villagers were brought to Bureau bases in Fairbanks, Anchorage, Skilak Lake, and McGrath and trained together as crews. They were on duty as fire-fighters and were paid. Their attendance at classes was required. They also could be dispatched to fires at a moments notice.

In addition, equipment demonstration, training aids and all other teaching support became possible. The quality and quantity of training increased significantly. The slight extra cost of this method produced vastly superior results in efficiency, morale and teamwork.

Basic training for a fire fighter consists of several things:



The Bureau in Alaska has tested two methods for training native crews.

The first method was to train crews in their villages. Bureau personnel went to the villages with light equipment to be demonstrated, such as portable pumps and minimum training materials. Attendance by the villagers was voluntary, since there was no way for them to be paid.

Villagers as a rule do not arise each day until around noon. Instructors could not gather full classes until after lunch. The trainees would begin to drift off to go fishing, or for normal village activities by 3 p.m. Since such training had to be done during the early spring in freezing weather, when there were no fires, demonstration of pumps and similar equipment was not always possible.



He is taught proper use of fire-fighting tools; the rudiments of fire behavior; tactics of fire fighting; safety; and his responsibilities to himself and to the fire fighting organization.

He is informed on rules of camp behavior and sanitation, the uses he may make of the commissary, how he will be paid, and how he will be cared for if injured. He is prepared as well as the Bureau knows how to prepare him for his role as a fire fighter.

If he absorbs this training well, he may receive further training which will qualify him for more responsible work.



WHY FIGHT FIRE ?

"In the old days, when we didn't fight them, forest fires in Alaska burned a million acres a year. Now we fight them, spend \$10 million a year, and still burn a million acres a year."

That was the tongue-in-cheek observation by the late Fred A. Weiler, Bureau director for Arizona, and a veteran of 10 years of service in Alaska, as he groped for answers to Alaska's fire problems.

"Alaska came to us down through a history of runaway forest and tundra fires. That is why Alaska is what it is--a natural balance of Nature. That is why there is clean water and gravel for fish and habitat for moose in old burns, and for ruffed grouse. Stop burning altogether and you may destroy this."

That in essence, is one of the arguments put forward by conservationist/preservationist groups.

"You can't let that man sit there with that pump spraying boondocks while my house burns down." Thus complained a Sterling, Alaska, resident of the Kenai peninsula during the Swanson River fire of 1969.

"Why not let a fire burn in the wilderness? There are no commercial values to be saved. And what about damage to the land? Don't bulldozers and cat lines do more harm to the environment than the fire?"

These and other questions arise when the cost of fighting fires in Alaska is under review.

Obviously no single answer will satisfy all questioners. However, there is a case to be made for stemming Alaska's annual wildfire onslaughts.

Portions of the case have emerged throughout the foregoing report. However, further comment is in order.

Annual fire expenditures have risen without attendant reduction of average acreage burned.

Public pressure for controlling fire in high-value areas has intensified. Public questions are being asked as to the environmental wisdom of allowing large fires to burn unchecked in remote areas.

The pre-1970 methods of preparing for fire suppression contained no workable means of controlling costs.

Once a fire got away, spending restrictions were lifted until it was halted. Except for the 1970 advance force in Alaska, this is still the case.

The 1970 combination in Alaska of advance preparation, standby organization, and initial attack proved that runaway fires and runaway costs need not be inevitable.

Yet so long as there are men who set fires deliberately and accidentally, and so long as lightning strikes interior Alaska, there will be wildfires, and losses to wildfires.

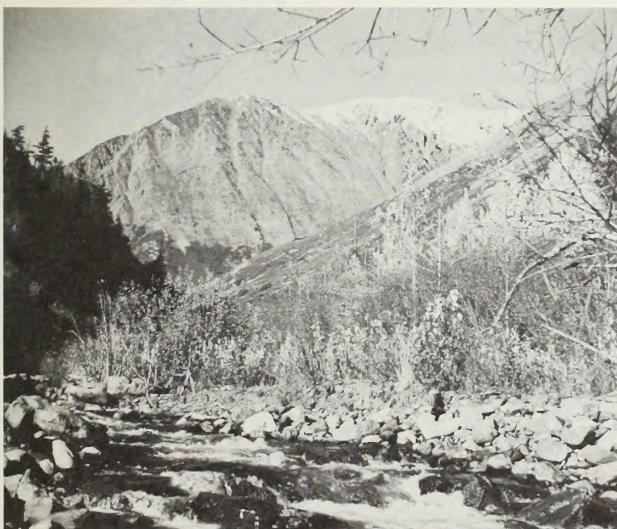
However, the Bureau has found means and methods which promise to reduce and control the area of such fires, to allow the Bureau to establish a realistic "allowable annual burn" of 100,000 acres, and hold fires as close to that as practicable.

Such a program would produce a million new acres of "natural" wildlife habitat every 10 years. It would allow the Bureau to manage habitat for wildlife, recreation, watershed, timber, and grazing values with hope for consistent success. Intentional ("prescribed") burning might become a part of such management, if needed.

Standby initial attack capability would provide wildlife protection for the Alaskan homeowner in the bush, a protection responsibility thrust upon the Bureau without commensurate recognition outside Alaska. The Bureau is authorized and compelled--for its own self interest--to suppress fires on lands owned by others if Bureau lands are threatened. There is virtually no spot in rural Alaska where fires burn without threatening surrounding public domain lands, or other Bureau protected lands. (Under existing arrangements, the Bureau fights wildfires on most state lands and on certain federal lands under other jurisdictions.)

The need to protect values, particularly commercial values, is obvious in populated areas such as the Kenai peninsula. The case for fighting fires in remote wilderness is not so obvious. What then is the justification for such suppression?

Alaska's population is growing and the prospect is favorable for continued growth. Thus resource values of all kinds throughout Alaska are increasing. The size of low value areas is shrinking.



Today there is slight commercial demand upon Alaska's timber resources other than in the panhandle of the southeast--and those areas are under Forest Service management and protection.

Thus, saving saw timber and its sawmill economy today are insufficient cause alone for suppressing fires in the Alaskan bush.

In bad fire years, wildfire losses in one area may exceed natural replenishment in another. For a period after the fire there is no suitable habitat and very little nourishment for wildlife, and an exposed and sometimes vulnerable watershed. Wildlife and watershed management therefore call for fire management.

There is relatively slight measurable watershed damage in Alaska from fire alone. Not enough study has been made for clean answers on this subject. Yet watersheds have suffered in the past from fire suppression. Bulldozers have left enduring fire line scars in scattered areas on the Kenai peninsula, around Chicken, and elsewhere that have been detrimental to those watersheds. There are other instances of past heavy equipment damage during fire control. As a result, use of heavy equipment now is severely restricted.

Keeping fires small and thus subject to control without heavy equipment is the answer to watershed protection. Effective initial attack makes such response possible on a practical scale.

There is another reason for limiting fire damage. It makes good financial sense. Traditional fire control methods have been unjustifiably costly--in money, in natural resources, in manpower, and in public esteem.

The Bureau is convinced that it tested during 1970 in Alaska a new method which proved no more expensive than the average fire year expenditure, but which reduced damage eight times below the average year, and almost 40 times below 1969.

Thus the question no longer need be: "Why Fight Fires?" Now it can be: "Why Accept Needless Loss?"

MAP OF ALASKA



KEY	
BLM OFFICES	○
RETARDANT BASES	□
HEЛИTACK BASES	△

1970 — A STATISTICAL SUMMARY

NARRATIVE

ISLAND LAKE FIRE #9203

The Island Lake Fire was discovered at 1425 hours, on June 7, 1970, by a private pilot. BLM was notified at 1438 hours, and dispatched a helitack crew from Skilak Lake with fire control aid Marv Olson. They arrived at 1505 hours. Retardant aircraft and the helitack crew from Anchorage was also dispatched. At the time of initial attack, fire size was 50 to 75 acres with one spot fire $\frac{1}{4}$ mile northwest of the main fire. The helitack crew took initial action on the spot fire since the main fire was burning too rapidly.

By 1600 hours, BLM forces totaled 28 men, a 300-gallon tanker, and 2,000 gallons of retardant. An additional 150 EFF were ordered and Anchorage District was notified that initial attack had failed. At approximately 1800 hours, BLM forces were reorganized along the North Kenai Road and are credited with saving four houses. By 2030 hours, attack forces totaled 78 men, two tankers, nine cats, one helicopter bucket, and 29,400 gallons of retardant dropped.

A meeting was held in Kenai at 2400 hours with King, Olson, and Timmons (newly arriving fire boss). An order for overhead, BIFC kits, and 50 pumps was placed. An additional EFF order was placed bringing total manpower ordered to 600.

Retardant aircraft arrived over the fire Monday at 0400 hours with an Aero Commander remaining in continuous orbit during the day. The fire was still active at 2400 hours, and at 0400 hours retardant was very effective in preventing any fire build up during the day Monday. Cats completed about 80 percent of the basic line construction by 1000 hours, Monday.

Native EFF crews (organized and trained) continued to arrive throughout the day Monday. Four Fairbanks seasonals arrived midmorning and were given line responsibility. The only additional overhead besides the fire boss were three McGrath seasonals which had been working all night. Line EFF totaled 628 by Monday evening. The combination of continuous retardant availability, trained EFF crews, and sufficient cats contributed in preventing the fire from escaping established lines on Monday. Additional overhead arrived late Monday night and Tuesday. Total manpower consisted of 659 line EFF, 46 support EFF, and 28 overhead.

Fire cause is believed to be incendiary. Control was established at 1000 hours, on Wednesday, June 10th. Jan Lindh was designated as fire boss on June 18th. Mop up continued with a reduction in force to 25 men on June 19th.

NARRATIVE

GALENA FIRE COMPLEX

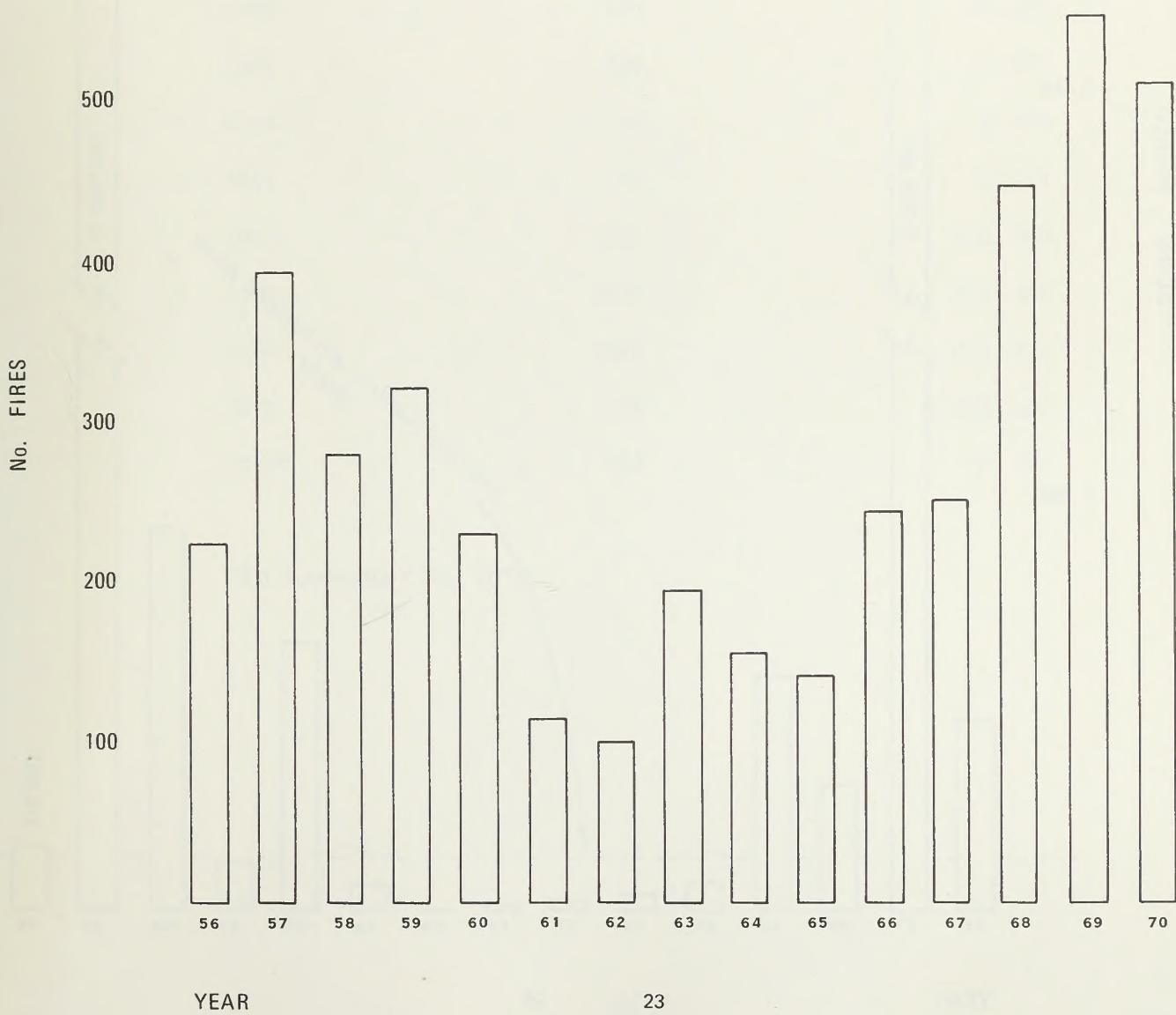
The early July Galena Fire Complex in the western half of the Fairbanks Fire District included about 100 actual fires. Fire ignition was confined to a 3-day period, the 2nd through 4th. Activity on and in support of the fires was heavy through the 12th and light thereafter except for a brief flareup on some of the larger fires on the 19th.

A total of 106,000 acres was consumed by fire. Of this total, 98,000 acres could be attributed to the 10 largest fires. These 10 fires burned ground cover of the Arctic-Alaska type almost exclusively. On less than $\frac{1}{2}$ of 1 percent of the acreage burned by these fires was there any significant tree cover.

Of the remaining 90 fires, seven accounted for 6,200 acres and the remaining 80-plus fires totaled only another 1,800 acres. About one half of this total was of the Arctic-Alaska cover type and one half Spruce or Spruce-Birch. Most of the manned fires fell into the group of 80-plus fires which totaled only 1,800 acres reflecting our policy of attacking the small fires and keeping them small and containing the larger ones when time and manpower dictate that they can be fought on our terms.

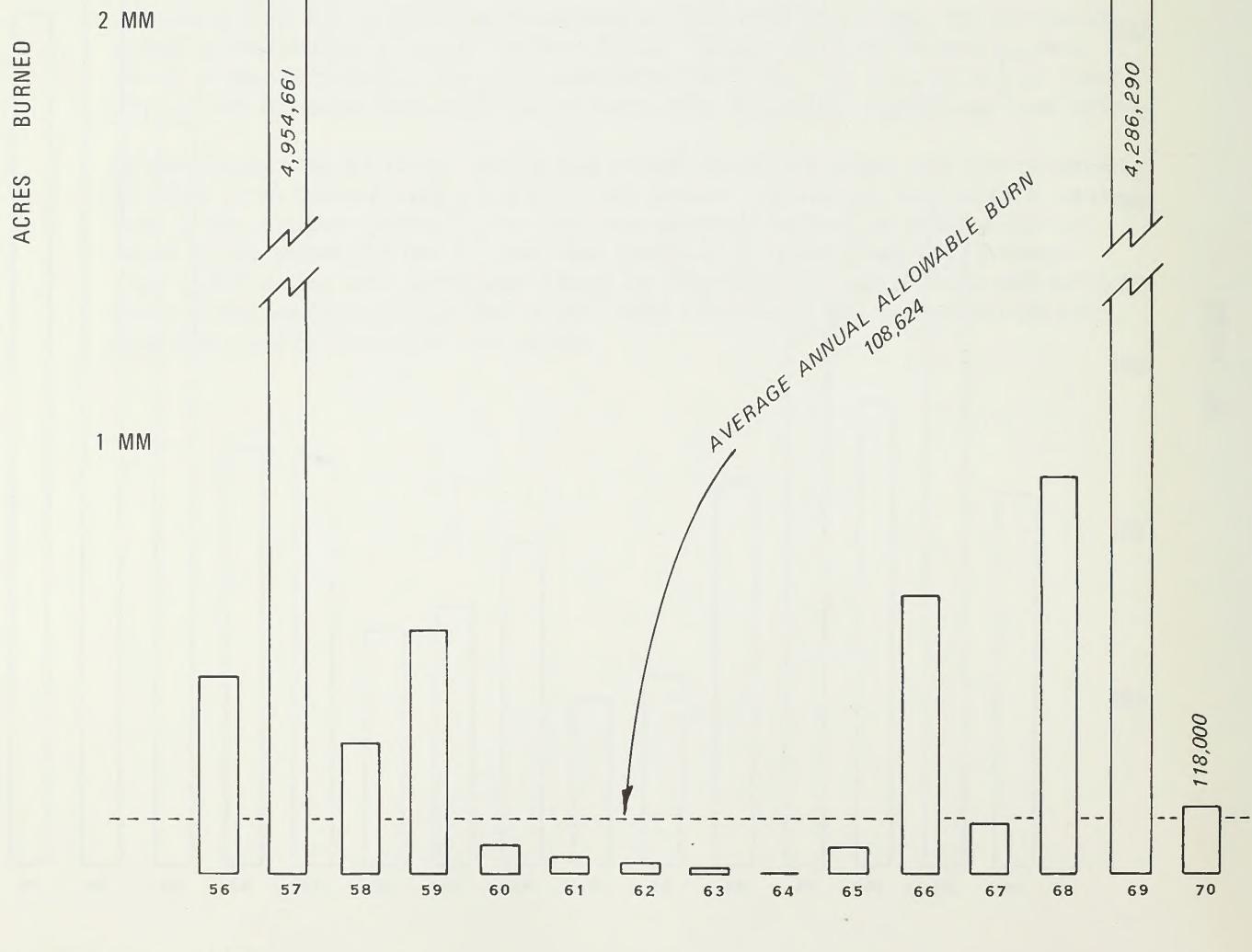
UNITED STATES DEPARTMENT OF INTERIOR
BUREAU OF LAND MANAGEMENT
ALASKA

ANNUAL NUMBER OF FIRES



UNITED STATES DEPARTMENT OF INTERIOR
BUREAU OF LAND MANAGEMENT
ALASKA

ANNUAL ACRES LOST AND ALLOWABLE BURN



ALASKA FIRE STATISTICS

Fire Losses

<u>Calendar Year</u>	<u>No. of Fires</u>	<u>Acres Burned</u>
1955	190	23, 582
1956	226	476, 593
1957	391	5, 049, 661
1958	278	317, 215
1959	320	596, 574
1960	238	87, 180
1961	117	5, 100
1962	102	38, 975
1963	194	16, 290
1964	164	3, 430
1965	148	7, 093
1966	256	852, 960
1967	207	109, 005
1968	442	1, 013, 301
1969	511	4, 231, 820
1970*	504	118, 137

*To September 20, 1970.

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